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October 6, 1999

Mr. Sirtaj Ahmed
Remedial Project Manager
United States Environmental Protection Agency
Region 5, SR-6J
Chicago, IL 60604-3590

EPA Region 5 Records Ctr.



379577

Re: Granville Solvents Site

Dear Mr. Ahmed:

During a recent review of the Granville Solvents Site PRP Group's Engineering Evaluation and Cost Analysis for the impacted soils, it was noted that Table 2-14 erroneously listed some of the MCL's for the chemicals of concern. I have enclosed a replacement Table 2-14 and associated text for the EE/CA. Please replace the existing pages 92-93 with the replacement pages 92-93. I am advised by Metcalf & Eddy that the MCLs for the compounds driving the soil remedy (PCE and TCE) in Table 2-14 are correct. The modeled treatment goals for PCE and TCE are also correct. Accordingly, the results of the work do not change.

In addition, it appears that the modeled and revised treatment goals listed in Table 2-10 for trichloroethene were listed as 6.93 mg/kg instead of 6.67 mg/kg (as reported in the modeling report and in the text in Section 2.5.7 and in Table 2-15 in the EE/CA). A revised Table 2-10 and associated revised pages are enclosed as well. Please replace existing pages 80-81 with the enclosed replacement pages 80-81.

Should you have any questions, please do not hesitate to call me or Gerald Myers at Metcalf & Eddy.

Sincerely yours,

Ben L. Pfefferle III

BLP:cjc

Enclosures

cc: Michael Anastasio, Esq., w/enc. (Overnight delivery)
Fred Myers, Ohio EPA, w/enc.
Technical Committee, w/enc.
Gerald Myers

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TABLE 2-10
SUMMARY OF EXPOSURE CONCENTRATIONS
FOR VOLATILE ORGANIC CHEMICALS OF CONCERN IN SOILS
(Concentrations in mg/kg)

	Maximum Detected Concentration	Modeled Soil Treatment Goal	Revised Soil Treatment Goal
1,1,1-Trichloroethane	1.7	147.81	147.81
1,1,2-Trichloroethane	0.012	4.0	4.0
1,1-Dichloroethane	0.011	59.22	59.22
1,1-Dichloroethene	0.007	2.74	0.0274 ^{a)}
cis-1,2-Dichloroethene	4.6	48.35	48.85
trans-1,2-D chloroethene	0.021	94.74	94.74
2-Butanone	0.014	360	360
Acetone	0.084	139	139
Benzene	0.014	3.0	3.0
Carbon disulfide	0.7	4.0	4.0
Chlorobenzene	0.027	66	66
Chloroform	0.002	62	62
Ethylbenzene	3.6	320.59	320.59
Methylene chloride	0.002	1.6	1.6
Tetrachloroethene	18	5.53	5.53
Toluene	0.34	725.2	725.2
Trichloroethene	11	6.67	6.67
Vinyl chloride	0.03	0.44	0.44
Xylenes	44	907	907

^{a)} Revised based on estimated risk for an industrial worker.

TABLE 2. 11 TOXICITY VALUES FOR CHEMICALS OF POTENTIAL CONCERN AT GSS

CHEMICAL	TOXICITY INFORMATION*										Oral Absorption Factor (c) (UNITLESS)
	NONCARCINOGENIC RfDs						CANCER SLOPE FACTORS				
	ORAL RfD (mg/kg/day)		ADJUSTED ORAL (DERMAL) RfD (b) (mg/kg/day)		INITIATION RfD (mg/kg/day)		ORAL SLOPE FACTOR (mg/kg/day) - 1	ADJUSTED ORAL (DERMAL) SLOPE FACTOR (a) (mg/kg/day) - 1	INHALATION SLOPE FACTOR (mg/kg/day) - 1		
	SUBCHRONIC	CHRONIC	SUBCHRONIC	CHRONIC	SUBCHRONIC	CHRONIC					
1,1,1-Trichloroethane	9.0E-02	NA	NA	NA	2.9E-01	2.0E-01	NA	NA	NA	1.0E+00	
1,1,2-Trichloroethane	4.0E-02	4.0E-03	4.0E-02	4.0E-03	NA	NA	5.7E-02	5.7E-02	5.7E-02	1.0E+00	
1,1-Dichloroethane	1.0E+00	1.0E-01	1.0E+00	1.0E-01	1.4E+00	1.4E-01	NA	NA	NA	1.0E+00	
1,1-Dichloroethene	9.0E-03	9.0E-03	7.2E-03	7.2E-03	NA	NA	8.0E-01	7.5E-01	1.2E+00	8.0E-01	
1,2-Dichloroethene (cis)	1.0E-01	1.0E-02	9.0E-02	9.0E-03	NA	NA	NA	NA	NA	9.0E-01	
1,2-Dichloroethene (trans)	2.0E-01	2.0E-02	1.8E-01	1.8E-02	NA	NA	NA	NA	NA	9.0E-01	
1,2-Dichloroethene (mixture)	9.0E-03	9.0E-03	8.1E-03	8.1E-03	NA	NA	NA	NA	NA	9.0E-01	
2-Butanone	2.0E+00	6.0E-01	1.6E+00	4.8E-01	2.9E-01	2.9E-01	NA	NA	NA	8.0E-01	
Acetone	1.0E+00	1.0E-01	1.0E+00	1.0E-01	NA	NA	NA	NA	NA	1.0E+00	
Benzene	NA	3.0E-04	NA	2.7E-04	1.7E-02	1.7E-03	2.9E-02	3.2E-02	2.9E-02	9.0E-01	
Carbon disulfide	1.0E-01	1.0E-01	8.0E-02	8.0E-02	3.0E-03	2.0E-01	NA	NA	NA	8.0E-01	
Chlorobenzene	NA	2.0E-02	NA	1.6E-02	NA	5.0E-03	NA	NA	NA	8.0E-01	
Chloroform	1.0E-02	1.0E-02	9.5E-03	9.5E-03	NA	NA	8.1E-03	8.4E-03	8.1E-02	9.5E-01	
Ethylbenzene	1.0E-01	1.0E-01	8.0E-02	8.0E-02	2.9E-01	2.9E-01	NA	NA	NA	8.0E-01	
Methylene chloride	6.0E-02	8.0E-02	4.8E-02	4.8E-02	8.6E-01	8.6E-01	7.5E-03	9.4E-03	1.8E-03	8.0E-01	
Tetrachloroethene	1.0E-01	1.0E-02	1.0E-01	1.0E-02	NA	NA	5.2E-02	5.2E-02	2.0E-03	1.0E+00	
Toluene	2.0E+00	2.0E-01	2.0E+00	2.0E-01	NA	1.1E-01	NA	NA	NA	1.0E+00	
Trichloroethene	NA	6.0E-03	NA	8.0E-03	NA	NA	1.1E-02	1.1E-02	8.0E-03	1.0E+00	
Vinyl chloride	NA	NA	NA	NA	NA	NA	1.9E+00	2.4E+00	3.0E-01	8.0E-01	
Xylenes	NA	2.0E+00	NA	1.8E+00	NA	8.6E-02	NA	NA	NA	9.0E-01	

NA - Toxicity values (RfD/CSF) not available from IRIS, HEAST, scientific literature, USEPA nor OhioEPA for risk evaluation.

H - Health Effects Assessment Summary Tables (HEAST)

I - Integrated Risk Information Service (IRIS)

N - National Center for Environmental Assessment (NCEA)

Sources: U.S. EPA, Integrated Risk Information System (IRIS) database accessed January 1998.

U.S. EPA Health Effects Assessment Tables (HEAST), Annual FY-1995 edition (Heast, 1995).

Note: Region IV default oral absorption factors were used when necessary and are as follows: VOCs - 0.80, SVOCs - 0.50, inorganics - 0.20.

(a) Adjusted oral toxicity values used for calculation of dermal risks.

Adjustment of an administered to an absorbed dose CSF: (Administered CSF) - 1/(Oral Absorption Factor) = Absorbed Dose CSF

(b) Adjusted oral toxicity values used for calculation of dermal hazards.

Adjustment of an administered to an absorbed dose RfD: (Administered RfD) x (Oral Absorption Factor) = Absorbed Dose RfD

(c) Oral absorption factors from chemical-specific Toxicological Profiles, Agency for Toxic Substances and Disease Registry, U.S. Public Health Service.

For the clay layers, estimated values of porosity, storativity, and specific yield were used. The porosity of clay rich soils was estimated to be 35 percent. The storativity was assumed to be 0.001 and the specific yield to be 0.01 percent. No reliable field method exists for determining storativity in low permeability soils. The specific yield used may appear relatively small in comparison to typical specific yield values for permeable soils. However, little water drains from low permeability clay-rich soils. Water enters these surficial soils in response to rainfall, and is removed largely by evapotranspiration during the growing season. The transition between full saturation and field capacity represents the loss of only a very small amount of water in these soils, which is reflected by the low specific yield used in the model.

Several contaminant compounds have been identified in field investigations at the Site. These compounds are listed in Table 2-14. Distribution of these contaminants in the aquifer and the overlying soils has been investigated and reported in the *Soil Data Report* (1996), and summarized earlier in this report.

The initial concentrations of the chemicals of concern assigned to the aquifer layers of the model were based on the concentrations analyzed at the Site in the Hydropunch® study (*Work Plan for the Removal Action*, 1995). This study was completed in 1994 and does not represent current concentrations after operation of the pump and treat remediation system for nearly three years. The GSS monitoring wells have shown a decline in contaminant concentrations since pumping was started. However, the most complete analysis of the distribution of contaminant in the aquifer was from the Hydropunch® study, and to increase the probability of the model predicting wellfield impact, these values were used in the model.

The measured concentration of solvents in the saturated clay soil (from the *Soil Data Report*, 1996) is a total concentration in soil, which includes concentration of solvent adsorbed on the clay soil and pore water concentration. The pore water concentration for each solvent was calculated based on individual sorption constant, soil bulk density, and porosity, and assigned to the clay soil layers of the model.

The boring program at the Site involved a close spacing of boring locations, and specialized techniques were used to detect DNAPLs. DNAPLs have not been positively identified or confirmed at any location at the Granville Solvents site using approved U.S. EPA methods. An anomaly exists between the field screening and laboratory results. The experimental field screening results are not consistent with the results obtained from the U.S. EPA-approved analytical methods used to analyze these soils. In most cases where the screening results indicate the presence of DNAPLs, the approved analytical methods

TABLE 2-14
CHEMICALS OF CONCERN AND GROUNDWATER STANDARDS

Chemical of Concern ¹⁾	Maximum Concentration Detected in Soil ²⁾ (mg/kg)	Groundwater MCL (mg/l)	Groundwater Risk-Based MCL (calculated) (mg/l)
1,1,1-Trichloroethane	1.7	0.200	
1,1,2-Trichloroethane	0.012	0.005	
1,1-Dichloroethane	0.011	³⁾	0.810
1,1-Dichloroethene	0.007	0.007	
cis-1,2-Dichloroethene	4.6	0.07	
trans-1,2-Dichloroethene	0.021	0.100	
2-Butanone	0.014	³⁾	1.9
Acetone	0.084	³⁾	0.61
Benzene	0.014	0.005	
Carbon disulfide	0.7	³⁾	0.021
Chlorobenzene	0.027	³⁾	39
Chloroform	0.002	³⁾	0.1
Ethylbenzene	3.6	0.7	
Methylene chloride	0.002	0.005	
Tetrachloroethene	18	0.005	
Toluene	0.34	1	
Trichloroethene	11	0.005	
Vinyl chloride	0.03	0.002	
Xylenes (total)	44	10	

¹⁾ Chemicals of concern were identified in the *EE/CA*, May 1996.

²⁾ Reported in the *Soil Data Report*, September 1996.

³⁾ MCLs have not been developed for these compounds. MCLs were calculated using standard EPA methods

From: <Anastasio.Michael@epamail.epa.gov>
To: R5WST.R5WASTE(AHMED-SIRTAJ)
Date: 10/6/99 2:52pm
Subject: GRANVILLE SOLVENTS SITE

Sirtaj, please double-check the EE/CA, tables, values, etc. when you get these pages. Thanks. Mike.

----- Forwarded by Michael Anastasio/R5/USEPA/US on 10/06/99
02:51 PM -----

BPfefferle@thf.com on 10/06/99 01:55:28 PM

To: Michael Anastasio/R5/USEPA/US@EPA
cc:

Subject: GRANVILLE SOLVENTS SITE

Mike:

We very recently discovered some errors in Tables 2-10 and 2-14 of the final EE/CA for the Granville Solvents Site. The errors are transcriptional in nature and do not affect the outcome. I am forwarding to you and to Sirtaj Ahmed replacement pages for the EE/CA.

Sirtaj thought that the approval of the EE/CA could come as early as early next week. I think it best that the replacement pages be made part of the EE/CA before it is formally approved.

Thank you for your assistance. Of course should you have any questions, please do not hesitate to call me.

Regards,

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CC: R5WST.R5WASTE (VANDERPOOL-LUANNE)